ORIGINAL ARTICLE

THE ROLE OF SEX EDUCATION: TEENAGE PREGNANCY RATES AND OUTCOMES IN BAYELSA STATE

Maureen A. Okumoko[1] Isa A. Ibrahim[1] Israel Jeremiah[1] Vivian C. Okeke[2]

Aloysius E. Ligha[3] Uche Onwudiegwu[3]

[1]Niger Delta University Teaching Hospital, Okolobiri, Bayelsa State

[2]National Obstetrics Fistula Center, Abakaliki, Ebonyi state

[3]Bayelsa Medical University, Yenagoa, Bayelsa State

CORRESPONDING AUTHOR: Okumoko A. Maureen

Niger Delta University Teaching Hospital, Okolobiri

maureenokumoko04@gmail.com; +234 7036107090

ABSTRACT

Background: The rate of teenage pregnancy in Bayelsa state, South-South Nigeria is worrisome. Many of the teenagers in Bayelsa state remain without reproductive health education, which buttresses the fact that teenagers do not possess the knowledge that could be necessary for correct decision-making, perpetuating the cycle of teenage pregnancy. The aim of this study is to determine the impact of sex education on teenage pregnancy rates and outcomes in Bayelsa State.

Method: This was a cross-sectional descriptive study conducted among 2,644 teenagers aged 13-19 years. A multistage sampling technique was used to recruit participants for the study. Data was collected using a questionnaire adapted from the World Health Organisation illustrative – questionnaire for interview survey with young people. Results were presented as frequencies and percentages in tables as appropriate, and level of statistical significance was set at $p < 0.05$.

Results: Of the 2,644 respondents, 1671(63.2%) had no sex education, 1916(72.5%) of them were not aware of contraception and 1218(46.1%) had their first sexual activity between 13-15 years. The highest occurrence of teenage pregnancy was seen in those teenagers whose parents had no formal education with 215(36.2%) and 259(43.6%) of fathers and mothers respectively. Consequences include abortion, stigmatization and neglect.

Conclusion: By providing adolescents with accurate information and support, comprehensive sex education programs can empower them to make informed decisions about their sexual health and well-being.

Keywords: Teenage pregnancy, sex education, Bayelsa State, teenage pregnancy rates, outcome

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INTRODUCTION

Teenage pregnancy, according to the World Health Organisation (WHO), refers to pregnancy in a girl aged between 13 - 19 years. It encompasses the period of adolescence, between the start of puberty and the completion of physical development, generally between the ages of 10 and 19.[1] Teenage pregnancy is a public health problem contributing to morbidity and mortality as well as social development. Onwubuariri and Kasso[2,] in their study on teenage pregnancy; prevalence, pattern and predisposing factors in a tertiary hospital, Southern Nigeria, reported that one of the critical protective factors for teenage pregnancy is education. Accurate information on sexual health, contraceptives, and family planning, influences responsible attitudes and that has been proven to decrease rates of teenage pregnancy.[2] The literature points to the essential call for engaging the community so that appropriate cultural understandings are garnered, and involving parents and community leaders who can support the message of delayed childbearing.[3] For instance, the adoption of the cultural orientations of the people in these programs may capture the attention of parents and others in the society as well as minimize resistance.[3] Due to the diverse risk factors influencing teenage pregnancy, a multi-sectorial approach is warranted that will go beyond addressing constraints of a socioeconomic nature, but will also address those related to access and utilization of health services, inequities in education, and cultural beliefs that endorse early childbearing among the youths in Bayelsa State.[3,4]

The Importance of Sex Education

Sex education is a broad term that encompasses education on human sexuality, relationships, and reproductive health.[5] Comprehensive sex education (CSE) programs cover a range of topics including but not limited to; understanding human reproductive systems and sexual health, knowledge of various contraceptive methods and strategies for preventing sexually transmitted infections (STIs), developing skills for building and maintaining healthy relationships, including communication, consent and boundaries, encouraging critical thinking and decision –

making skills to help adolescents make informed choices about their sexual health.[5-7]

The Impact of Sex Education on Teenage Pregnancy Rates

Various studies[5,6] have demonstrated the effectiveness of CSE in reducing teenage pregnancy rates. A review of some of these studies found that CSE programs can delay sexual initiation, reduce the number of sexual partners, and increase the use of condoms and other contraceptives.

In countries with CSE programs, like the Netherlands and Sweden, teenage pregnancy rates are significantly lower compared to countries with abstinence-only or limited sex education.[7] For example, the Netherlands has a teenage pregnancy rate of 4.7 per 1000 girls aged 15-19, compared to 34.6 per 1000 in the United States and 106 per 1000 in Nigeria.[1] While the overall rate in Nigeria is 106 per 1000, there are regional variations within the country, with some areas reporting higher rates than others.[1] According to a study published by the National Institute of Health,[7] Northern Nigeria, for example, generally experiences higher rates of teenage pregnancy compared to the South, possibly due to factors like culture, lower educational attainment and socioeconomic status.

In Nigeria, teenage pregnancy continues to be rampant, especially in less endowed regions of the country like Bayelsa state. It was reported that, it can have significant consequences for the young mothers and their children[8] including; poor educational attainment – teenage mothers are more likely to drop out of school, limiting their future educational career opportunities. They are more likely to experience poverty and rely on government assistance and their children are also more likely to experience poor health outcomes, including low birth weight and infant mortality.

CSE can help mitigate these outcomes by reducing the number of teenage pregnancies and promoting healthy behaviours among adolescents.[9] In addition, teenage pregnancy has extended consequences in the social and economic aspect because education and employment opportunities are likely to be affected – school dropout, unemployed or relegated to do menial jobs because of lack/inadequate education – leading to extended

poverty cycles.[6,9] Eradicating teenage pregnancy in Bayelsa calls for multi-sectoral approaches therefore involving the education sector, policy makers, and healthcare providers. Another related factor, adolescent health, can also be greatly promoted by government policies. Measures on the rights for access to reproductive health, namely contraceptives, and counselling, should be in place in areas where teenage pregnancy is high like Bayelsa state.[10] Comprehensive sex education programs that are implemented within the community may provide opportunities or platforms where adolescents may receive mentoring from role models and mentors and as such enhances and encourages girl child education and deferment of pregnancy amongst others.[10,11] Nevertheless, policy implementation in Bayelsa has been characterized in many instances by the lack of infrastructure and resource capacity to support these programs to extend services to the rural and hard-to-reach communities.[10] Eradicating these infrastructural lacunae is imperative to guarantee health care delivery for teenagers in the remote regions of Bayelsa state. Public-private partnerships with Non-Governmental Organisations (NGOs) and International bodies including WHO and United Nations Children's Fund (UNICEF), may direct resources and support to adolescent health interventions in the rural communities of Bayelsa state.[12] This study is crucial for identifying and understanding the role of sex education, its relationship to the burden of teenage pregnancy in Bayelsa State, thereby informing prevention strategies that will improve outcome for young parents and their children.

MATERIALS AND METHODS

This was a descriptive cross-sectional study, carried out between November 2024 and March 2025 in three (3) randomly selected local government areas - from the 3 senatorial zones of Bayelsa State.

Study population: The target group for this study comprised all females, 13-19 years attending secondary school and residing in Bayelsa State, South-South, Nigeria.

Inclusion and Exclusion criteria; Female teenagers who have resided in the selected local government area for at least 6 months were included in this study while those teenagers

whose parents/guardians did not give consent for participation in the study were excluded.

Data collection

Data was collected from female students attending secondary school in the selected local government areas. Data was collected from a total of 2644 consenting participants using a structured, self-administered questionnaire for interview survey which was adapted from the WHO Illustrative questionnaire for interview – surveys with young people. Variables relating to the knowledge of sex education, and sexuality were obtained. Prior to data collection, the questionnaire was pre-tested among eligible participants in a school that was not included in the study, to assess its validity and reliability in eliciting appropriate responses from study participants. Findings from the pre-test of the questionnaire was used to modify the questionnaire where necessary before the commencement of the actual study.

The questionnaire had three sections: Information on socio-demographic characteristics of the participants, information on the parents and family, the participants' knowledge and practice of safe sex, and their attitude towards teenage pregnancy was obtained. Socioeconomic stratification was done based on the Oyedeji[14] classification which used occupation and highest educational status of the parents. The questionnaire was administered to the recruited participants by the Researcher with assistance from the Research Assistants.

Data Analysis

Data was coded and entered into the IBM Statistical Package for Social Sciences (SPSS) version 25 and analysed. Chi square was used to determine any significant association between categorical variables, ANOVA was used to compare means and logistic regression was used to determine the relationship between teenage pregnancy and some social determinants. The logistic regression developed to express the relationship between teenage pregnancy and age, educational level of parents, sex education, age at first sexual activity, awareness of contraception, history of STIs and their respective statistical significance. The R-squared, which is the coefficient of determinant of the variables and represents the goodness of fit, was also determined. Results are presented

in tables as frequencies, percentages, with confidence interval set at 95% and statistical significance at $p<0.05$.

Ethical consideration

Ethical clearance for this study was obtained from the Ministry of Education and Ministry of Health respectively. Informed consent was obtained from the principals of selected schools and from parents of selected participants. Assent was also obtained from recruited participants.

RESULTS

Socio-demographic characteristics of participants

Two thousand six hundred and forty – four (2644) teenagers were recruited for this study. The mean age of all participants was 16.4 ±1.6 years. 912(34.5%) participants were aged 13–15 years, 1508(57%) were 16-18 years while 224 (8.5%) were 19 years. 1,843 (69.7%) and 801 (30.3%) were recruited from public and private schools, respectively. About 67% lived in urban areas, 41.1% were from polygamous families and 40.7% belonged to the lower socioeconomic class (Table 1).

Table 1: Socio-demographic characteristics of participants

Variables	No. of respondents (N=2,644)	
	N	%
Age		
13-15 years	912	34.5
16-18 years	1508	57.0
19 years	224	8.5
Type of School		
Public	1843	69.7
Private	801	30.3
Place of residence		
Urban	1777	67.2
Rural	867	32.8
Family Type		
Monogamous	945	35.7
Polygamous	1086	41.1
Single/Separated/Divorced	613	23.2

Socioeconomic Class (SEC) of parents		
Lower SEC	892	33.7
Middle SEC	1077	40.7
Upper SEC	675	25.5

Knowledge of sex education, awareness of contraception and age at first sexual activity

Table 2 shows that of the 2,644 respondents, majority of them, 1671(63.2%,) had no sex education, 1916(72.5%) of them were not aware of contraception and 1218(46.1%) had their first sexual activity between 13-15 years.

Table 2: Knowledge of sex education, awareness of contraception and age at first sexual activity

	No of respondents N=2644	
Variables	N	%
Sex education		
Yes	973	36.8
No	1671	63.2
Awareness of contraception		
Yes	728	27.5
No	1916	72.5
Age at first sexual activity		
13-15	1218	46.1
16-18	925	35.0
19	501	18.9

Association between parents' educational level and mean age of teenage pregnancy

Table 3 reveals that the highest occurrence of teenage pregnancy was seen in those teenagers whose parents had no formal education with 215(36.2%) and 259(43.6%) of fathers and mothers respectively. The mean age of pregnancy for participants whose parents had no formal education was low (13.2-13.4 years) as compared to their counterparts whose parents had university education (16.3-16.9 years) and this difference was significant p=0.000.

Table 3: Association between parents' educational level and mean age of teenage pregnancy

	Father (N=594)			Mother (N=594)		
Variables	N/Mean(Yrs)±SD	%	P-value	N/Mean(Yrs) ±SD	%	P-value
Parents' educational level						
University	24/16.3±1.2	4.0	0.000**	24/16.9±1.4	4.0	0.000**

Post-secondary education	49/15.8±1.3	8.2	84/16.0±1.1	14.1
Secondary education	182/14.6±1.5	30.6	126/15.6±1.6	21.2
Primary education	124/13.2±0.9	20.9	101/13.4±1.2	17.0
No formal education	215/13.5±1.0	36.2	259/13.1±1.2	43.6

Yrs - Years, % - percentage, **Significant p value

Consequences of teenage pregnancy

Five hundred and ninety – four (22.5%) teenagers out of the 2,644 had been pregnant. 386(65.0%) were neglected, 426(71.7%) of them were stigmatized and majority of them, 546(91.9%) had undergone an abortion (Table 4).

Table 4: Consequences of teenage pregnancy

Variables	No. of respondents (N=594)	
	N	%
Neglect		
Yes	386	65.0
No	208	35.0
Physical Abuse		
Yes	265	44.6
No	329	55.4
Stigmatization		
Yes	426	71.7
No	168	28.3
Abortion		
Yes	546	91.9
No	48	8.1
Miscarriage		
Yes	32	5.4
No	562	94.6
Preterm delivery		
Yes	16	2.7
No	578	97.3

Factors associated with teenage pregnancy

Majority of the participants, 953 (36.0%) have had at least two sexual partners with 378 (14.3%) reporting a history of sexually transmitted infections (Table 5).

Table 5: Factors associated with teenage pregnancy

Variable	N=2644 N/Mean(Yrs)±SD	%	p-value
Multiple sexual partners			
0-1	402/14.2±0.8	15.2	<0.001**
2	953/16.5±0.6	36.0	
3	786/15.4±1.2	29.7	
≥4	503/16.0±0.8	19.0	
History of STI			
Yes	378/16.4±1.4	14.3	<0.001**
No	2266/15.5±1.0	85.7	

Yrs - Years, % - percentage, **Significant p value

Predictors of teenage pregnancy

Table 6 shows that, of the five hundred and ninety- four participants who had been pregnant, participants in the 16-18 years age group had decreased odds (OR 0.36; 95%CI: 0.28-0.52; p<0.001) of being pregnant when compared to their counterparts in the 19 years age group. Public school participants were significantly associated with an increased odd (OR 1.01; 95%CI: 0.58-1.14; p<0.001) of falling pregnant. Participants who were from polygamous families and lower socio economic class, had significantly increased odds of being pregnant (OR 1.38; 95%CI: 0.60-2.16 and OR 1.15; 95%CI: 0.81-1.71) when compared to their counterparts from monogamous families and middle socioeconomic class (OR 0.82; 95%CI: 0.79-1.45 and 0.96; 95%CI: 0.45-1.94) respectively. The difference is statistically significant.

Table 6: Estimates of logistic regression

Variable	UOR(95%CI)	P-value	R-squared
Age			
13-15 years	0.87(0.52-1.16)	<0.001**	0.70*
16-18 years	0.36(0.28-0.45)		
19 years*	1		
Type of school			
Public	1.01(0.91-1.14)	<0.001**	0.60*
Private*	1		
Educational Level of parents			
No formal education	1.82(1.03-2.10)	<0.001**	0.62*
Primary education	1.20(0.83-1.29)	<0.001**	
Secondary education	0.71(0.58-0.80)	0.03**	
University*	1		
Sex Education			
Yes	0.50(0.39-0.58)	<0.001**	0.58*
No*	1		
Age at first sexual activity (Years)			
13-15	2.50(1.76-2.64)	<0.001**	0.78*
16-18	1.22(0.71-1.36)	0.004**	
19*	1		
Awareness of contraception			
Yes	0.45(0.32-0.64)	<0.001**	0.66*
No*	1		
History of STI			
Yes	0.92(0.63-1.26)	0.004**	0.50
No*	1		
Occupation of parents			
Senior public servant/professional/manager/contractor/large scale trader	0.45(0.37-50)	<0.001**	0.69*
Intermediate grade civil servant/senior school teacher	0.48(0.40-0.55)	<0.001**	

Junior grade civil servant/junior school teacher/driver/artisans	0.94(0.76-1.11)	<0.001**	
Petty trader/labourers/messengers	1.62(0.89-1.74)	<0.001**	
Unemployed/homemaker/student*	1		
Place of residence			
Urban	1.22(0.75-1.65)	<0.001**	0.70*
Rural*	1		
Family type			
Monogamous	0.82(0.79-1.45)	<0.001**	0.58*
Polygamous	1.38(0.60-2.16)	<0.001**	
Single/Separated/Divorced*	1		
Socioeconomic class (SEC) of parents			
Lower SEC	1.15(0.81-1.71)	<0.001**	0.76*
Middle SEC	0.96(0.45-1.94)	<0.001**	
Upper SEC*	1		

**Significant p-value
*R-squared is the numerical value for fraction of the variation in the dependent variable that can be explained by the independent variable
*Reference Category, **significant p value, UOR-Unadjusted Odds Ratio, CI- Confidence Interval

DISCUSSION

This study aimed to determine the role of sex education on teenage pregnancy rates and outcomes in Bayelsa State. Teenagers between 13-19 years, represent the transitional phase between childhood and adulthood, often characterized by experimentation and risk-taking behaviours.

Majority of the participants in this study had no sex education, and the age at first sexual activity was significantly high in those teenagers, 13-15years. This may be due to the fact that most teenagers, especially in this age group, have no knowledge of the central facts of sexuality, which involves biological, psychological, physical, erotic, emotional, social or spiritual feelings and behaviours.[15] This finding is similar to that of a study,[16] which reported that, lack of education on safe sex, whether it is from parents, schools, or otherwise, is a risk factor for teenage pregnancy. Furthermore, many teenagers are not taught about methods of birth control and how to deal with peers who pressure them into having sex before they are ready.[17]

Another finding was the poor awareness of contraception amongst the participants. This is comparable to the findings of researchers who in their different studies on teenage pregnancy[18-20],

reported that teenage pregnancy was prevalent in teenagers who had no opportunities to access adequate healthcare nor obtain the requisite knowledge about methods of contraception and how to use them. Being knowledgeable about the types of contraception available, with an option for abstinence from sexual activity, plays a role in the reduction of teenage pregnancy.[16] Various studies done in Malawi and Kenya revealed that, majority of sexually active teenagers had no idea how to prevent pregnancy because they had not been exposed to training and education as concerning reproductive health.[19]

This study found that teenagers whose parents, either fathers or mothers, had no formal education had a higher rate of pregnancy with the mean age of occurrence significantly lower than their counterparts whose parents had university education. This finding is similar to that of findings in a study on prevalence of teenage pregnancy and the associated contextual correlates in Rwanda,[21] reported that teenagers whose parents had low level of education had a higher incidence of pregnancy because such parents may have lower expectation for their children's educational attainment, subsequently leading to poor or lack of motivation for academic success and a higher likelihood of early sexual activity and pregnancy. This leads to a recurring cycle of low socioeconomic status and poverty. Education enhances self-awareness, delays marriage, and fosters aspirations beyond early motherhood. Girls who stay in school are more likely to access reproductive health services and less likely to engage in early sexual activity.[10,22]

This relationship between parental education levels and teenage pregnancy outcomes underscores the intergenerational impact of education. Parents with higher education levels are better equipped to provide guidance, set expectations, and facilitate access to health resources for their children.[23] These findings support global advocacy for universal access to quality education as a means of empowering adolescents and reducing teenage pregnancy rates. These practices reduce the likelihood of early pregnancies and promote healthier adolescent development.[11,23]

Outcome expectancies refer to the anticipated outcomes of specific behaviours, which can

influence whether individuals choose to engage in those behaviours. The consequences of teenage pregnancy have a cascading effect as it not only affects the young girl who gets pregnant, her unborn child, parents, relatives, the community she belongs to and the society at large are affected. [24] Findings from this study reveal that, majority of the participants who had been pregnant were stigmatized, neglected and/or physically abused. This is comparable to findings on risk factors and consequences of early pregnancy,[25] that reported that majority of teenagers who were stigmatized developed low self-esteem, became depressed while some had suicidal tendencies. The sexual partner, who may also be a teenager would not be able to support her financially, she becomes the primary caretaker for herself and unborn child as she may be ostracized by her family and friends. [2,25] Her chances of continuing her education decreases day by day as the pregnancy progresses and the situation is worse if the parents belong to the lower SEC. [2]

In this study, it was also found that a large number of the participants had had abortions. This may be attributed to their lack of adequate sex education, poor knowledge on the accessibility and use of contraceptives or fear of parental disapproval. Similar research findings[2,26] on protective sexual behaviours among young adults in Nigeria and determinants and outcome of teenage pregnancy in a rural community in Jos, posited that, teenagers may not have access to birth control, or how to correctly use them leading to unintended pregnancies. Furthermore, teenagers may fear their parents' reaction to them getting pregnant, leading them to consider abortion without seeking support.[26]

In the context of teenage pregnancy, adolescents are more likely to engage in preventive behaviours if they believe that such behaviours will lead to positive outcomes, such as avoiding pregnancy, staying in school, or achieving their personal goals.[7] Conversely, if adolescents perceive that avoiding pregnancy will result in negative social consequences, such as being ostracized by peers or family, they may be less likely to take preventive actions.[13]

In Bayelsa, adolescents' outcome expectancies are shaped by the broader social context, which may include cultural expectations, family

beliefs, and peer influence.[27,28] For example, some adolescents may believe that becoming a teenage mother is an acceptable or even desirable outcome, especially if they perceive other teenage mothers in their community are leading fulfilling lives. Others may be motivated to avoid pregnancy because they believe it will limit their opportunities for education, employment, and personal growth.[26,27]

To effectively change outcome expectancies, health education programs must highlight the positive benefits of delaying pregnancy, such as increased educational and career opportunities, better health outcomes, and greater financial independence.[28-30] These programs should also address the potential negative consequences of teenage pregnancy, such as social stigma, limited life opportunities, and health risks. By reframing the outcomes of early pregnancy, interventions can help shift adolescents' expectations and encourage them to make healthier reproductive choices.

Conclusion and Recommendation

This study underscores the urgent need for a multi-sectoral approach to addressing teenage pregnancy in Bayelsa State. Interventions must go beyond merely providing information on contraception and must also tackle the structural barriers that perpetuate adolescent pregnancies. Encouraging formal education in teenagers, formulating awareness campaigns, can help bridge the gap for those who may not be attending school or who are living in remote areas. These campaigns can use media, such as radio, television, and social media, to reach a wider audience. Mentorship programs, where older, informed adolescents help younger peers understand issues of sexual health and reproductive rights, can also be an effective tool in promoting healthier sexual behaviours.

STUDY LIMITATION

Out of school females were not sampled. Including out of school females may contribute data that may further expose the need for comprehensive sex education in communities and market places, in Bayelsa state.

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CONFLICT OF INTEREST

The authors declare no conflicting interest(s)

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